




FORM PTO-1449 (Modified)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE			ATTY. DOCKET NO. K-1782 D		SERIAL NO. (to be assigned)							
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use several sheets if necessary) (37 CFR 1.98(b))					APPLICANT RONALD M. PENICH et al.		FILING DATE August 5, 2003 GROUP (to be assigned)							
U.S. PATENT DOCUMENTS														
EXAMINER INITIAL		PATENT NUMBER						ISSUE DATE	PATENTEE	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE		
A		4	5	4	0	5	9	6	9/85	Nimmagadda	427	37		
		4	5	5	4	2	0	1	11/85	Andreev et al.	428	215		
		4	5	9	9	2	8	1	7/86	Schintmeister et al.	428	699		
		4	6	4	3	9	5	1	2/87	Keem et al.	428	489		
		4	6	8	6	1	5	6	8/87	Baldoni II et al.	428	698		
		4	7	1	4	6	6	0	12/87	Gates, Jr.	428	698		
		4	7	5	3	8	5	4	8/88	Gavrilov et al.	428	698		
		4	7	7	6	8	6	3	10/88	Van den Berg et al.	51	295		
		4	8	3	5	0	6	2	5/89	Holleck	428	469		
		4	8	4	2	7	1	0	6/89	Freller et al.	204	192.38		
X		4	8	9	5	7	7	0	1/90	Schintmeister et al.	428	552		
FOREIGN PATENT OR PUBLISHED FOREIGN PATENT APPLICATION														
		DOCUMENT NUMBER						PUBLICATION DATE	COUNTRY OR PATENT OFFICE	CLASS	SUBCLASS	TRANSLATION		
												YES	NO	
A		0	5	9	2	9	8	6	7/98	Europe			X	
		0	7	0	9	4	8	3	5/96	Europe			X	
		9	8	4	4	1	6	3	10/98	PCT			X	
		3	5	3	2	7	3	3	6/86	Germany				X
A		0	4	4	6	3	7	5	11/85	Europe			X	
OTHER DOCUMENTS (Including Author, Title, Date, Relevant Pages, Place of Publication)														
	A	H. Curtins, PLATIT: a new industrial approach to cathodic arc coating technology, Surface and Coatings Technology 76-77 (1995) pp. 632-639												
	I	S. Kadiac and J. Muell, Sputtering systems with magnetically enhanced ionization for ion plating of TiN films, J. Vac. Sci. Technol. A 8 (3), May/June 1990 pp. 1318-1324												
	I	Hsieh et al. Deposition and characterization of TiAlN and multi-layered TiN/TiAlN coatings using unbalanced magnetron sputtering, Surface and Coatings Technology (1998) pp. 132-137												
	I	Anderson et al., Deposition, microstructure and mechanical and tribological properties of magnetron sputtered TiN/TiAlN multilayers, Surface and Coatings Technology (2000) pp. 219-226												
	A	Akari et al., Reduction in Macroparticles during the deposition of TiN films prepared by arc ion plating, Surface and Coatings Technology 43/44 (1990) pp. 312-323												
EXAMINER <i>chun</i>					DATE CONSIDERED <i>6/04</i>									
EXAMINER: Initial citation is needed. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.														

FORM PTO-1449 (Modified)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTY. DOCKET NO. K-1782 D		SERIAL NO. (to be assigned)								
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use several sheets if necessary) (37 CFR 1.96(b))				APPLICANT RONALD M. PENICH et al.										
				FILING DATE August 5, 2003		GROUP (to be assigned)								
U.S. PATENT DOCUMENTS														
EXAMINER INITIAL		PATENT NUMBER						ISSUE DATE	PATENTEE	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE		
A		4	8	8	4	9	4	0	1/91	Bryant et al.	407	119		
		5	0	7	1	6	9	3	12/91	Sue et al.	428	212		
		5	0	7	5	1	8	1	12/91	Quinto et al.	428	698		
		5	2	0	8	1	0	2	5/93	Schulz et al.	428	336		
		5	2	5	2	3	6	0	10/93	Hutti et al.	427	255.2		
		5	2	6	6	3	8	9	11/93	Omor et al.	428	216		
		5	3	2	8	8	7	5	7/94	Euda et al.	501	87		
		5	3	3	0	8	5	3	7/94	Hofmann et al.	428	697		
		5	3	6	8	9	3	9	11/94	Kawamura et al.	428	408		
		5	4	7	8	6	3	4	12/95	Setoyama et al.	428	216		
A		5	5	0	3	9	1	2	4/96	Setoyama et al.	428	216		
FOREIGN PATENT OR PUBLISHED FOREIGN PATENT APPLICATION														
		DOCUMENT NUMBER						PUBLICATION DATE	COUNTRY OR PATENT OFFICE	CLASS	SUBCLASS	TRANSLATION YES NO		
A		0	7	0	1	9	8	2	3/96	Europe			X	
A		0	5	9	2	9	8	6	4/94	Europe			X	
OTHER DOCUMENTS (Including Author, Title, Date, Relevant Pages, Place of Publication)														
	A	McCandlish et al., Processing and Properties of Nanostructured WC-Co, Nanostructured Materials Vol. 1, (1992) pp. 119-124												
	I	Subramanian et al., Review of multicomponent and multiplayer coatings for tribological applications, Wear, 165 (1993) pp. 85-95												
	I	Chu, Deposition and properties of polycrystalline TiN/NbN superlattice coatings, J. Vac. Sci. Technol. A 10(4), Jul/Aug 1992 pp 1604-1609												
	I	Holleck, Designing Advanced Coatings For Wear Protection, Surface Engineering 1991 Vol. 7 No. 2 pp. 137-144												
	I	Holleck et al., Preparation And Behaviour of Wear-Resistant TiC/TiB ₂ , TiN/TiB ₂ And TiC/TiN Coatings with High Amounts of Phase Boundaries, Surface and Coatings Technology, 36 (1988) pp. 707-714												
EXAMINER									DATE CONSIDERED					
									6/04					
EXAMINER: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.														

FORM PTO-1449 (Modified)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTY. DOCKET NO. K-1782D		SERIAL NO. (to be assigned)							
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use several sheets if necessary) (37 CFR 1.98(b))				APPLICANT RONALD M. PENICH et al.		GROUP (to be assigned)							
				FILING DATE August 5, 2003									
U.S. PATENT DOCUMENTS													
EXAMINER INITIAL		PATENT NUMBER			ISSUE DATE	PATENTEE	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE				
A		5	5	4	9	9	7	5	8/96	Schulz et al.	428	553	
		5	5	8	8	9	7	5	12/96	Hammond et al.	51	293	
		5	6	5	6	3	8	3	8/97	Tanaka et al.	428	627	
		5	6	7	9	4	4	8	10/97	Kawata	428	216	
		5	7	0	0	5	5	1	12/97	Kukino et al.	428	212	
		5	7	1	2	0	3	0	1/98	Goto et al.	428	332	
		5	7	8	3	2	9	5	7/98	Barnett et al.	428	216	
		5	8	3	3	0	2	1	11/98	Mensa-Wilmot et al.	175	433	
		5	8	5	3	8	7	3	12/98	Kukino et al.	428	336	
		5	8	8	2	7	7	7	3/99	Kukino et al.	428	216	
A		5	8	8	2	7	7	8	3/99	Sugizaki et al.	428	216	
FOREIGN PATENT OR PUBLISHED FOREIGN PATENT APPLICATION													
		DOCUMENT NUMBER			PUBLICATION DATE	COUNTRY OR PATENT OFFICE	CLASS	SUBCLASS	TRANSLATION YES NO				
OTHER DOCUMENTS (Including Author, Title, Date, Relevant Pages, Place of Publication)													
	A	Holleck, Summary Abstract: Wear Resistant Carbide-Boride Composite Coatings, J. Vac. Sci. Technol. A 3(6), Nov/Dec 1985 pp. 2345-2347											
		Holleck, Material Selection for Hard Coatings, J. Vac. Sci. Technol. A 4(6), Nov/Dec 1986 pp. 2661-2669											
		Holleck, Multilayer Coatings - Influence of Fabrication Parameters on Constitution and Properties, Surface and Coatings Technology, 41 (1990) pp. 179-190											
		Holleck et al., Significance of Phase Boundaries in Wear Resistant TiC/TiB ₂ Materials High Tech Ceramics, Elsevier Science Publishers B.V., Amsterdam 1987 pp. 2609-2622											
		English abstract of JP 7018416 A2 to Aisuo											
	A	English abstract of JP 052106 A2 to Shinichi											
EXAMINER					DATE CONSIDERED								
					6/04								
EXAMINER: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.													

FORM PTO-1445 (Modified)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTY. DOCKET NO. K-1782 D		SERIAL NO. (to be assigned)							
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use several sheets if necessary) (37 CFR 1.98(b))				APPLICANT RONALD M. PENICH et al.		FILING DATE August 5, 2003							
						GROUP (to be assigned)							
U.S. PATENT DOCUMENTS													
EXAMINER INITIAL													
A	PATENT NUMBER							ISSUE DATE	PATENTEE	CLASS	SUBCLASS	FILING DATE IF APPROPRIATE	
	5	9	8	1	0	4	9	11/99	Ohara et al.	428	216		
	6	0	7	1	5	6	0	6/00	Braendle et al.	427	249.19		
	6	0	7	7	5	9	6	6/00	Hashimoto et al.	428	216		
	6	1	0	3	3	5	7	8/00	Selinder et al.	428	216		
	6	1	2	0	8	4	2	9/00	Lu et al.	427	250		
	6	1	9	8	9	3	6	3/01	Meckel	473	349		
	6	3	3	3	0	9	9	12/01	Strondi et al.	428	216		
B	6	2	7	4	2	4	9	8/01	Braendle et al.	428	551		
FOREIGN PATENT OR PUBLISHED FOREIGN PATENT APPLICATION													
	DOCUMENT NUMBER							PUBLICATION DATE	COUNTRY OR PATENT OFFICE	CLASS	SUBCLASS	TRANSLATION YES NO	
OTHER DOCUMENTS (including Author, Title, Date, Relevant Pages, Place of Publication)													
	A	English abstract of JP 7268606 A2 to Aisuo											
		English abstract of JP 7305181 A2 to Nobuhiko et al.											
	X	English abstract of JP 3120352 A2 to Naoya et al.											
EXAMINER  DATE CONSIDERED 6/6/4													
EXAMINER: Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.													

FORM PTO-1449 U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE INFORMATION DISCLOSURE STATEMENT STATEMENT BY APPLICANT (Use several sheets if necessary)	ATTY. DOCKET NO. K-1782D	SERIAL NO. (to be assigned)
	APPLICANT(S) RONALD M. PENICH et al.	
	FILING DATE August 5, 2003	GROUP Art Unit (to be assigned)

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER							DATE	NAME	CLAS S	SUBCLASS	FILING DATE IF APPROPRIATE
A	AA	5	9	7	8	2	0	7	11/1999	Anderson et al.	361	311	
	AB	6	1	1	1	6	9	7	08/2000	Merrill et al.	359	497	
	AC	6	3	0	6	2	6	6	10/2001	Metin et al.	204	192.12	
	AD	6	0	5	1	1	1	3	04/2000	Moshlehi, Mehrdad M.	204	192.12	
	AE	5	6	8	7	6	7	9	11/1997	Mullin et al.	123	41.79	
	AF	6	0	4	5	6	6	7	04/2000	Moll, Eberhard	204	192.38	
A	AG	5	0	7	1	6	9	3	12/1991	Suc et al.	428	212	
	AH												
	AI												
	AJ												
	AK												

FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER							DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
													YES	NO
	AL													
	AM													
	AN													
	AO													
	AP													

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

	AQ		
	AR		
	AS		

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

* English translation of the abstract

PTO/SB/08b(05-03)

Approved for use through 04/30/2003. OMB 0851-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1996, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449B/PTQ

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Use as many sheets as necessary)

Sheet

1

of

1

Complete If Known

Application Number	10/634,433
--------------------	------------

Filing Date	August 5, 2003
-------------	----------------

First Named Inventor	Penich et al.
----------------------	---------------

Art Unit

Examiner Name

Attorney Docket Number	K-1782C
------------------------	---------

NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No.†	Include name of the author (In CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.
A		KAWATA K et al. "Characterization of multilayer films of Ti-Al-O-C-N system prepared by pulsed d.c. plasma-enhanced chemical vapor deposition", THIN SOLID FILMS, Elsevier-Sequoia S.A. Lausanne, CH, Vol. 390, No. 1-2 June 30, 2001 pp. 64-69
A		PCT/US03/06953- Notification of Transmittal of the International Search Report or the Declaration PCT/US03/06953 - International Search Report

**Examiner
Signature**

Date Considered

6/04

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 809. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

1 Applicant's unique citation designation number (optional). 2 Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 120 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTQ-9199 and select option 2.

(Information Disclosure Statement by Applicant (PTO/SB/088) Other Prior Art—NonPatent Literature Documents (1449A/PTO) (6-2.1)—page 1 of 1)